Overview

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• Primary purpose: assess the extent to which C&I customers are likely to participate in the MA EE programs over the next few years.
• Economic forecast: provide an indication of the extent to which economic conditions might create barriers to C&I customer participation in the energy efficiency programs.
• Survey: assess the variety of barriers that C&I customers face with regard to EE program participation.
Economic Forecast
Forecast relies upon historic and forecast data from Moody’s Analytics.

Five regions of the state based on county borders: 1) Bristol County, 2) Greater Boston, 3) Central Massachusetts, 4) Cape Cod and the Islands, and 5) Western Massachusetts.

Several industry types: construction, health care, industrial, large/small office, miscellaneous commercial, restaurant/lodging, retail/grocery, schools/colleges, warehouse industrial, and wholesale.
MA 2011 Industry Employment, by Region

The chart shows the percentage distribution of employment across different regions in Massachusetts in 2011, broken down by industry type:

- **Greater Boston**
  - Large/Small Office
  - Health Care
  - Retail/Grocery
  - Restaurant/Lodging
  - Industrial (Manufacturing)
  - Misc. Commercial
  - School/Colleges
  - Wholesale
  - Construction
  - Warehouse/Industrial (Misc.)

- **Bristol**
  - Large/Small Office
  - Health Care
  - Retail/Grocery
  - Restaurant/Lodging
  - Industrial (Manufacturing)
  - Misc. Commercial
  - School/Colleges
  - Wholesale
  - Construction
  - Warehouse/Industrial (Misc.)

- **Cape**
  - Large/Small Office
  - Health Care
  - Retail/Grocery
  - Restaurant/Lodging
  - Industrial (Manufacturing)
  - Misc. Commercial
  - School/Colleges
  - Wholesale
  - Construction
  - Warehouse/Industrial (Misc.)

- **Central**
  - Large/Small Office
  - Health Care
  - Retail/Grocery
  - Restaurant/Lodging
  - Industrial (Manufacturing)
  - Misc. Commercial
  - School/Colleges
  - Wholesale
  - Construction
  - Warehouse/Industrial (Misc.)

- **West**
  - Large/Small Office
  - Health Care
  - Retail/Grocery
  - Restaurant/Lodging
  - Industrial (Manufacturing)
  - Misc. Commercial
  - School/Colleges
  - Wholesale
  - Construction
  - Warehouse/Industrial (Misc.)

The chart highlights the predominant industries in each region and how their contributions vary.
• In general, the state’s economy is expected to improve over the next several years.
• On a **statewide** basis, all the key indicators are expected to improve:
  – gross state product,
  – retail sales,
  – construction activity,
  – residential construction permits,
  – unemployment rates,
  – business bankruptcies,
  – commercial rental vacancy rates.
Economic Forecasts: Regional Differences

• Cape Cod & Islands:
  – Gross state product and retail sales will see little growth.
  – Declining employment expected for restaurants, misc. commercial, construction, industrial, and retail/grocery.

• Central Massachusetts:
  – Declining employment expected for misc. commercial, construction and retail/grocery.

• Western Massachusetts:
  – Declining employment expected for warehouse, and retail/grocery.
Annual Percentage Change in Real Retail Sales

- 2007: -5%
- 2008: -4%
- 2009: -3%
- 2010: 7%
- 2011: 6%
- 2012: 3%
- 2013: 1%
- 2014: 2%
- 2015: 2%
Business Construction Activity

The graph shows the Business Construction Activity (in 2011 dollars, millions) from 2006 to 2015. The activity peaked around 2008, then declined before starting to increase again in 2011 and continuing to rise through 2015.
Percentage Growth in MA by Industry

- Restaurant/Lodging
- Health Care
- Large/Small Office
- Construction
- Wholesale
- Misc. Commercial
- School/Colleges
- Industrial (Manufacturing)
- Retail/Grocery
- Warehouse/Industrial (Misc.)
Customer Survey
• We planned to interview 40 customers across the five state regions and across eight the industry types.
• Focus on medium and large C&I customers.
• Focus on customers that have not participated in the MA EE programs for the past 5 years.
• We collected customer contact information from most of the PAs and a few other stakeholders.
• We sent invitations to all 137 of the customer contacts that we received, that were eligible and that included contact information.
• Many customers declined or did not respond to our invitation.
• To date we have conducted 35 interviews, with an additional 3 interviews scheduled in the next 2 weeks.
• The customer types we interviewed were determined primarily by customer interest and availability.
• Nonetheless, the interviews we conducted provide a reasonable amount of geographic and industry diversity.
• Biggest limitation: majority of interviews (as much as 70%) were with customers that have participated in the MA EE programs.
## Completed Interviews

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Boston</th>
<th>Central Mass</th>
<th>Cape Cod</th>
<th>Western Mass</th>
<th>Bristol County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy industry</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Warehouses &amp; Distribution</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Retail</td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Office</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>10</td>
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<tr>
<td>Schools &amp; Colleges</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Healthcare</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Restaurants &amp; Lodging</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Miscellaneous</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td>7</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>41</td>
</tr>
</tbody>
</table>
Positive Feedback

• Many companies were grateful for the sustained incentives and technical assistance provided by the PAs over the years.
• Several companies appreciated the level of outreach they receive from the PAs.
• Some companies recognized the variety of efforts and approaches (upstream lighting; MOU) that the PAs are leveraging.
• Several companies recognized the positive impacts of the PAs efforts over time; i.e., ability to accelerate EE product development and make EE solutions affordable.
Common Themes

• The competition for capital is a key barrier to moving forward with EE projects.

• The impact of the economic climate varies by customer. Many customers are not affected by it. Others note that the competition for capital is exacerbated by the tight economy. Still others note that the economic climate increases the value of EE, as a means of cutting costs.

• Payback period is the main criteria for evaluating EE investments; often must be two years or less.

• Most customers either will participate or are considering participating in the next few years.
There are many different types of customers with different needs and barriers to participating in energy efficiency programs. This creates a significant challenge for PAs. Reaching additional customers and achieving deeper levels of savings per customer will likely require offering program technical and financial support that is more tailored to the unique needs of the many different types of electric and gas customers.
• The barriers to participation that have emerged from the interviews can be categorized in two ways:
  – Customer Barriers: customers identified participation barriers specific to their own decision-making processes.
  – Program Barriers: customers identified participation barriers that are a result of the efficiency programs, either in the way the programs are designed or administered.
Customer Barriers Mentioned in Interviews

- Customer's Competition for Capital
- Economic Climate
- Customer's Financial Limitations
- Corporate review & approval process
- Distrust of new technologies
- Company convinced it has done all it can

Number of Times a Barrier is Mentioned
Program Barriers Mentioned in the Interviews

- Insufficient Marketing & Outreach
- Transaction Costs
- Limited Measures
- Insufficient Incentives
- Responsiveness & Timing
- Opt out of SBC
- Programs not Tailored to Unique Needs

Number of Times a Barrier is Mentioned
• Three-Year Plans should recognize that:
  – The MA economy is expected to improve steadily over the next few years, and that many C&I customers do not see the state of the economy as a barrier to participation.
  – Many C&I customers believe they still have untapped cost-effective efficiency opportunities.
  – Achieving deeper levels of efficiency will likely require efforts to overcome the key barriers identified in this report, and require increased engagement from the PA staff, in terms of outreach, technical support and financing options.
  – Additional outreach and support from gas PAs is likely to lead to increased gas efficiency savings.
• PAs should collect and report more complete data regarding the customers who participate in their EE programs.
• A better understanding of customer participation types would provide the PAs with useful information about where the untapped efficiency opportunities lie and how to pursue them.
Recommendations for Further Research

• Research to better assess the perspectives of the C&I customers who have not participated in EE programs.
• Statewide research into opportunities for reducing the transaction costs associated with participation.
• Statewide training of PA staff to increase understanding of the needs of different customer types and industries; gathering best practices from MA and elsewhere.
• Statewide review to expand the types of efficiency measures offered, and the process for making new measures eligible.
• Research opportunities for the gas PAs to better coordinate their outreach and support services with electric PAs.
• Research practices for spending the efficiency budgets more evenly over the course of a year.